IN THE SPECIFICATION

Please replace the heading on page 1, line 6 as follows:
~~Description~~BACKGROUND OF THE INVENTION

1. Field of the Invention

Please insert the following heading, after the paragraph on page 1, lines 8-10:

2. Background of the Invention

Please replace the paragraph on page 1, line 28 to page 2, line 10 with the following:

Given~~On the basis of~~ existing regulations and an error rate p, it is frequently also necessary~~, on the basis of an error rate p,~~ to verify that the residual error rate R(p) is below the predetermined value. The value 10^{-2} must be assumed for p in this case, if no better value is verified. However, data transmissions, such as those~~for example~~ in accordance with the RS Standard 485/422 normally achieve a better error rate, such as~~for example of~~ 10^{-5}. If this value is intended to be used for verification that a predetermined residual error rate R(p) has not been exceeded, then it needs to~~must~~ be monitored during operation, that is to say on-line. If the value is exceeded, then a safety-based function needs to~~must~~ be carried out.

Please replace the paragraph on page 2, line 17 to page 3, line 3 with the following:

~~On the basis of the disclosure in t~~<u>T</u>he European Patent Application<u> discloses</u>~~,~~ the following approach ~~is described~~ for monitoring of a transmission between network subscribers of data packets which each have a data protection value and whose reception may be confirmed by the receiver by means of an acknowledgement. The process of identifying whether a received data packet has been corrupted during transmission is based on a check of the data protection value. The subscriber receiving a transmitted data packet uses the payload data to generate the data protection value once again, which is then compared with the received data protection value. Based on the comparison results, the resultant number of corrupted and uncorrupted data packets or acknowledgements is determined either within a time interval which is or can be predetermined, or over a number, which is or can be predetermined, of transmitted data packets. A safety-based reaction is consequently initiated if the ratio of corrupted to uncorrupted data packets or the number of corrupted data packets reaches or exceeds a threshold value which can be predetermined.

Please replace the paragraph on page 3, lines 5-13 with the following:

However, o~~O~~ne ~~major~~ disadvantage <u>with this approach</u>~~in this case~~ is~~, however, in particular~~ that a check such as this can be carried out only after complete reception of transmitted data packets, since not only must the received payload content be completely available in the receiver for

renewed generation of the data protection value in each case, but the received data protection value must also be completely available in the receiver in each case for verification of a correctly or incorrectly transmitted data packet.

Please insert the following heading, before the paragraph on page 3, lines 15-22:

Summary of the Invention

Please replace the paragraph on page 3, lines 24-27 with the following:

According to the invention, the object is achieved in ~~an extremely~~ surprising manner just by a method having the features of claim 1, an apparatus having the features of claim 9, and/or a network having the features of claim 16.

Please delete the paragraph on page 3, lines 29-30.

Please replace the paragraph on page 3, line 32 to page 4, line 10 with the following:

Thus, according to the invention, <u>transmission of data packets is</u>~~for~~ monitor~~ing~~<u>ed</u> ~~a transmission of data packets~~ between at least two network subscribers<u>. Transmission is performed</u>~~,~~ with safety-based monitoring of an error-based limit value which is and/or can be predetermined<u>.</u> <u>Transmission is</u>~~, being~~ carried out on the transmission medium for response to identified incorrectly transmitted

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data packets and identified correctly transmitted data packets. In order to determine incorrectly and correctly transmitted data packets, it is proposed that, ~~in order to determine incorrectly and correctly transmitted data packets,~~ a data record ~~which is expected by in each case at least one network subscriber~~ be embedded within the payload data. The data record is expected in each case by at least one network subscriber, and is~~that this data record be~~ used to determine incorrectly and correctly transmitted data packets.

Please replace the paragraph on page 3, line 32 to page 4, line 10 with the following:

A major advantage in this case is ~~that~~ the safety-relevant verification of the transmission with respect to compliance with an error-based limit value. This verification is carried out just by checking a transmitted data record against the corresponding expected data record, before the respective data packets are completely received by the intended reception subscribers. Consequently~~In consequence~~, this generally ensures that, ~~if appropriate, on the one hand,~~ any necessary safety-based reaction is initiated significantly closer to real time and, ~~on the other hand,~~ that any necessary repeated transmission of incorrectly transmitted data packets can be carried out at an earlier stage. Furthermore, the solution according to the invention makes it possible to make considerably more efficient use of the capacity of the network.

Please replace the paragraph on page 4, lines 27-33 with the following:

Futhermore, a~~A~~ preferred embodiment~~development furthermore~~ provides that a subscriber carrying out the evaluation of identified incorrectly transmitted data packets and identified correctly transmitted data packets does so in each definable time interval, and/or forms the ratio of the respective number of incorrectly transmitted data packets to correctly transmitted data packets.

Please replace the paragraph on page 5, lines 1-6 with the following:

Furthermore, one ~~particularly~~ preferred embodiment~~development~~ provides that the payload data records, which are used for determination, are addresses and/or check blocks. Payload data records are used, for example, for checking the transmission path via step chains by replacement of such check blocks.

Please replace the paragraph on page 5, lines 7-13 with the following:

Thus, particular embodiments of t~~T~~he invention can ~~thus~~ be used ~~in particular~~ for networks in which the probability of failure of a subscriber and of faulty data check records and/or addresses resulting from this is very much lower than incorrect transmission as a consequence of other disturbances on the transmission medium, such as those~~for example~~ resulting from EMC interference.

Please replace the paragraph on page 5, lines 20-29 with the following:

Specific applications of the invention have been advantageous~~Furthermore~~, particularly in practice.~~, it has been found to be advantageous that~~ _Eefficient, safety-relevant monitoring ~~according to the invention on an application-specific basis~~ intrinsically ensures a high degree of confidence_, when the monitoring is carried out on the basis of a discrete transmission channel, without any memory, by means of a functional relationship which is based on a Bernoulli distribution, between the probability of receiving an incorrect data record of a specific length and a maximum error rate which can be predetermined.

Please replace the paragraph on page 5, line 31 to page 6, line 2 with the following:

Futhermore, i~~I~~n one ~~extremely~~ expedient embodiment, the invention ~~furthermore~~ proposes that the product of a maximum error rate, which can be and/or is predetermined, and the number of bits within the expected data record be defined as the limit or threshold value.

Please replace the paragraph on page 5, line 31 to page 6, line 2 with the following:

Furthermore, the invention advantageously allows the monitoring to be carried out essentially by each subscriber that is intended for this purpose, so that slave

subscribers and/or master subscribers can be formed for this purpose, depending on the specific network configuration. In order to carry out central monitoring, one preferred embodiment~~development therefore~~ proposes that information about identified incorrectly and/or correctly transmitted data records be transmitted ~~from the~~ in each case <u>from the</u> at least one identifying subscriber to the monitoring subscriber. The monitoring according to the invention on the transmission medium thus allows simple network-specific matching<u>. F</u>~~, in which case,~~ for example, weighting of identified transmission errors is also provided, based on the respective location of the error identification and the downstream network structure.

Please replace the paragraph on page 6, lines 26-30 with the following:

A~~In a~~ further preferred refinement<u>_of</u>~~,~~ the invention ~~according to the invention~~ has matched networks for operation of automation systems, <u>including automation systems</u> for building control technology, in the process industry, for passenger transport and/or in the manufacturing industry.

Please insert the following heading, before the paragraph on page 6, line 32 to page 7, line 1:

<u>Brief Description of the Drawings</u>

Please replace the paragraph on page 6, line 32 to page 7, line 1 with the following:

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The invention will be described in more detail in the following text using a preferred but exemplary embodiment, and with reference to the <u>following</u> drawing<u>s</u>.

~~In the drawing:~~

Figure 1   <u>is a block diagram of</u>~~shows~~ an example ~~of the~~ network structure for use <u>with</u>~~of~~ the invention, and

Figure 2   <u>is a block diagram of</u>~~shows~~ a preferred configuration of a data packet to be transmitted according to the invention.

Please insert the following heading, after the paragraph on page 7, lines 10-21:

<u>Detailed Description of the Invention</u>

Please replace the paragraph on page 7, lines 23-33 with the following:

If the processing for the safety monitoring according to the invention is carried out by driver modules in a safety controller<u>,</u> which is associated with the master, then the transmission times via the network must also be taken into account in the overall reaction time. Integration of this safety function on the basis of appropriately matched driver modules into safe input/ output subscribers in consequence also shortens the processing time for the safety-based reaction.<u> </u>~~, i~~<u>I</u>n particular<u>, the processing time is shortened</u> as soon as the system detects that an

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error-based limit or threshold value has been exceeded during the transmission of data between subscribers.

Please replace the paragraph on page 8, lines 9-18 with the following:

Conventionally, a data protection block 3 such as this is generated by transmitting subscribers by matched driver-like means in order to carry out an error checking algorithm on the basis of the data in the payload data block 2, for example in the form of a "cycle redundancy check", which is known per se. In the present invention~~this case~~, before the transmission of the payload data 2 in the data packet 1 to be transmitted, an error checking algorithm is used to produce protection data 3 in the form of a CRC value, which is then attached to the payload data 2 in the transmission format.

Please replace the paragraph on page 9, line 24 to page 10, line 7 with the following:

In one example, there is~~The example of~~ an approach ~~in the following text to~~for determination~~ing~~ ~~of~~what a limit value or threshold value is. ~~F,~~for the sake of simplicity, this determination is also based on randomly distributed independent errors on a binary, symmetrical, discrete transmission channel without any memory (that is to say on a so-called hard decision channel DMC). On the basis of the further assumption of a Bernoulli distribution, this results in a preferred manner in a relationship between the probability $E(p)$ of observing and/or receiving an

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incorrectly transmitted data check record 23 of a specific
length "l" and an error rate p, which can be and/or is
predetermined, on the transmission medium as follows:

$$E(p) = \sum_{e=1}^{l} \binom{l}{e} p^e (1-p)^{l-e} ,$$

where "e" represents the bit sequential variable up to the
specific length "l".

Please replace the paragraph on page 10, lines 21-25 with
the following:

In contrast, t~~T~~he data protection values 3, which are
attached to the payload data block 2, are~~must, in contrast,~~
~~be~~ ignored during the evaluation. This, in consequence,
lead~~ings~~s to an earlier reaction, since the reception of
just a part of the data packet is sufficient for
monitoring.

Please replace the paragraph on page 11, lines 3-6 with the
following:

Thus, on average, only one in 12,~~−~~500 data records to be
monitored may be incorrect. If this is not the case, ~~this~~
then this results in the triggering of a safety-relevant
reaction which is appropriately preset or results from
this.